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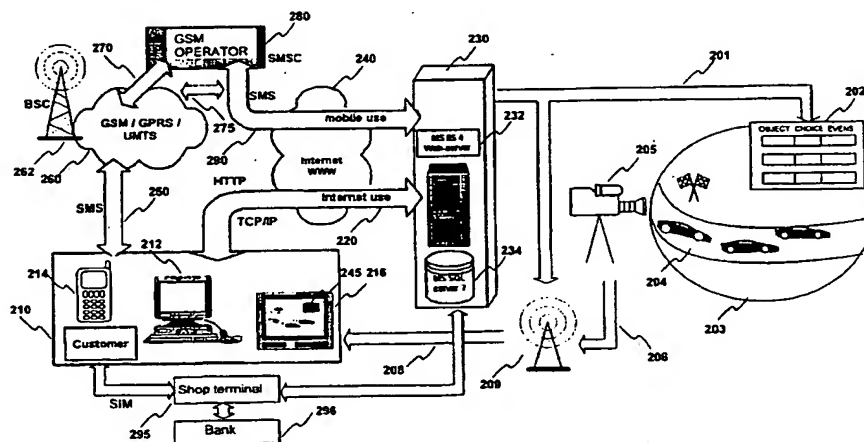
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(54) Title: METHOD, SYSTEM, TERMINAL AND BUSINESS MODEL FOR PROVIDING ELECTRONIC SERVICES



(57) Abstract: The present invention relates generally to a method, a system, a terminal, and a business model for providing electronic services. The electronic services may concern e.g. betting, lottery, amusement games, casino games, auctions or other electronic commerce service. The present invention relates more particularly to implementing online electronic services with telecommunications media. One idea of the present invention is providing an electronic services system where a general mobile communications system is used for conveying the information between the user terminal and an electronic service producer, and the right to access the mobile communication system is on some degree limited to the transmission of messages to/from the electronic service producer. A user terminal (or SIM of the user terminal) is thus made logically related to one or several electronic service providers. This idea allows the electronic services to be used anywhere in the coverage area of the mobile communication system. The invention also allows a straight-forward procedure to pay for the services, if the subscriber connection is used only for the services of a determined service producer(s).

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METHOD, SYSTEM, TERMINAL AND BUSINESS MODEL FOR PROVIDING ELECTRONIC SERVICES

Field of the Invention

- 5 The present invention relates generally to a method, a system, a terminal, and a business model for providing electronic services. The electronic services may concern e.g. betting, lottery, amusement games, casino games, auctions or other electronic commerce service. The present invention relates more particularly to implementing online electronic services with telecommunications media.

10 Background of the invention

In the following betting services are described as an example of an electronic service where the present invention can be applied. The invention is, however, not in any way restricted to the betting services.

- 15 It is well known to arrange betting in e.g. horse races where the audience of the race can make bets prior to a race. However, it may take much time to travel to the races, and it also requires a lot of effort to go to the betting booth, queue up and make a bet. In order to be able to betting at home, also electronic betting services have been developed.

- 20 In an Internet-based electronic betting system bets are usually guaranteed by agreements or the bettors may have, for example, a general-purpose account, such as a credit or debit account for paying the bets during the betting. The bettor must therefore have an agreement with a bank and the betting service provider for the payment of bets.

- 25 Figure 1 illustrates a prior art betting management system 100 for receiving and processing bets from one or more bettors 130 and 140. The betting management system 100 processes each received bet to determine whether the bets can be accepted. There is usually one betting service provider that runs the betting management system, but there may also be several service providers 150, 160 in one betting management system. If a betting service provider accepts a given bet, the
30 betting management system 100 binds the bettor to form a legally binding bet contract.

The bets may be guaranteed, for example, using a general purpose account, such as a credit or debit account, maintained by an issuing bank, such as issuing bank 170 and 180. The conditions specified in a bet may also include, for example, a description of the bet. If the bet is successful, a reward is payed to the bettor. For this purpose there is a further contract between the bettor and the betting service provider 150, 160 for binding the service provider to pay the reward to the bettors bank account 170, 180.

As shown in FIG. 1, the CPO management system 100 includes a central controller 190 for processing the information in a manner described above.

Each bettor contacts the betting management system 100, for example, by means of telephone line, in-person contact or through an agent, and provides the betting management system 100 with the terms of their bets. Each bettor may employ a general-purpose computer, for communicating with the betting management system 100. The general-purpose computer of each bettor is usually comprised of a processing unit, a modem, memory means and any software required to communicate with the betting management system 100.

There are certain drawbacks related with the described prior art solutions to implement an electronic betting. The communication between the betting management system and the user is carried out via a telephone line. The user may have a computer with a modem, and the user makes a call to the betting service provider. In order to get information on the betting objects and parameters, and in order to make bets, the user needs to have a continuous telephone connection to the betting management system. A continuous connection thus causes high expenses to the user. It also takes a lot of time for the user to follow the event/betting, and if the communication is made with the user's computer, the user has to stay by the computer for long periods. One solution could be using mobile terminals with wireless modems. However, this only makes it possible to follow the betting in different places, but the user still has to stay by the computer for long periods. The wireless data connections also tend to be even more expensive than data connections on a fixed telephone line. One possibility could also be to make short connections every now and then, but the drawback with this solution is that the right instant to make a bet may be missed.

Another drawback with the electronic betting services in the Internet is that their use is often not pleasant for all users. Even if the Internet services have gained

popularity, many people do not find attractive to communicate with a computer system for long periods.

5 A further problem is related to authentication of a bettor. Since the user may make binding bets through this telephone connection, there must be an authentication procedure before accepting the user to the electronic betting service. Before this kind of an authentication procedure is possible, there must be an agreement between the user and the electronic betting provider, and the electronic betting provider must give security codes for establishing the connections. A further problem with the prior art solutions is that one needs to have a payment agreement with the betting
10 service provider and a bank as described above. Therefore it may be too troublesome for ordinary potential users to try and start using the betting services.

As previously mentioned, betting was described as an example of an electronic service. Similar problems are related to providing other electronic services as well.

Summary of the Invention

15 The objective of the present invention is to create a solution for providing electronic services wherein the above mentioned problems of the prior art solutions are reduced or avoided.

One idea of the present invention is providing an electronic services system where a general mobile communications system is used for conveying the information
20 between the user terminal and an electronic service producer, and the right to access the mobile communication system is on some degree limited to the transmission of messages to/from the electronic service producer. A user terminal (or SIM of the user terminal) is thus made logically related to one or several electronic service providers. This inventive idea allows the electronic services to be used anywhere in
25 the coverage area of the mobile communication system. The invention also allows a straight-forward procedure to pay for the services, if the subscriber connection is used only for the services of a determined service producer(s).

If applied to abetting service the communication for making bet orders from the user to the betting management system can be accomplished by sending digital messages
30 with a user dedicated communications. "A user dedicated communication" means here electronic communications where the receiving betting management system can identify the customer or subscriber sending the message. This communication may be preferably a short message service (SMS) of a mobile communications system, or

it can be e.g. an authenticated Internet connection, email, etc. Short messages can be transferred from a mobile phone to the mobile communications center in order to transmit bet orders, and also short messages from the mobile communications center to the mobile phone can be used for acknowledging the bet orders. The communication between the mobile center and the betting management system can also be based on short messages, or some other type of data connection.

A short message service means in this context a service of transferring digital data messages (with maximum length) without creating a continuous point-to-point (circuit switched) connection. A short message service is available in new digital mobile communication systems. An example of such a system is the GSM (Global System for Mobile communications).

The inventive solution has several advantages over the prior art solutions. The betting can be performed without agreements by simply acquiring a prepaid SIM for a mobile terminal. It is also possible to produce terminals that have specific features for using certain services. It is even possible to produce "disposable" mobile terminals which can be used for specific services, and contain a determined prepayment for using the services. By using service specific terminals, the use of the services does not prevent the use of a general mobile for eg. telephone conversations.

A further advantage is that the telecommunication operator is not required to process the messages that are transferred in using the services. This way the short message center is not loaded and even large amounts of messages can be transferred to the management system of the service provider. Also the communication on the authentication to use a service and on payments can be made directly between the user terminal and the service provider.

Applied to betting, the user is able to view the event and take part in betting wherever there is the concerned TV channel available and where there is a mobile communications system coverage. Therefore a single betting service provider can arrange the betting in the context of an alive TV program in any country where the program is visible and where there is a mobile communication coverage. A user does not need to make a continuous data connection to the betting management system. The user can also get instant information on a possible acceptance of a user's bet order. And if the user wishes to make a new bet order, the user can send in real time a short message with the required bet order information. There is no

need to make a new data transfer connection involving possible unsuccessful attempts causing a harmful delay in transmitting the order.

The present invention concerns also a business model for arranging betting in the described manner.

5 As to the application of betting, the betting object may for example concern results of matches, races or games. As the invention provides a solution for a real time betting, it is can also be used for betting on things that may happen with a very short time interval. For example, betting object may be "who makes the next goal in the hockey match". And the betting choices may then cover all players or the most
10 probable ones. The evens may be predetermined according to e.g. historical number of goals of each player. Or the evens may be determined by the distribution of bets. Another possible objects for bets may be:

- How long does it take to change a tyre in a Formula race for a determined driver?
- What is the number of goals in a football match on a certain time instant?
- 15 - Who gets the next penalty in an icehockey match?

The characterising features of the present invention are as follows:

A method for providing electronic services, comprising the steps of:

- providing a user terminal a right to connect to a mobile communication system;
- 20 providing the user terminal a right to receive messages from the mobile communication system;
- providing the user terminal a right to have access to at least one electronic service produced by at least one determined service producer;
- providing the user terminal a right to transmit user dedicated digital messages
25 via the mobile communication system; and
- making the right to transmit user dedicated digital messages via the mobile communications system dependent on whether the message is addressed to one of said at least one determined service producer.

A system for providing electronic services, comprising:

- 30 means for providing a user terminal a right to connect to a mobile communication system;
- means for providing the user terminal a right to receive messages from the mobile communication system;

means for providing the user terminal a right to have access to at least one electronic service produced by at least one determined service producer;

means for providing the user terminal a right to transmit user dedicated digital messages via the mobile communication system; and

5 means for making the right to transmit user dedicated digital messages via the mobile communications system dependent on whether the message is addressed to one of said at least one determined service producer.

A user terminal, comprising

10 - means for establishing the user terminal with a right to connect to a mobile telecommunication system;

- means for establishing the user terminal with a right to provide access to at least one electronic service of at least one determined electronic service producer; and

15 - means for establishing the user terminal with a right to transmit user dedicated digital messages via the mobile communication system, said right being dependent on whether the message is addressed to one of said at least one electronic service producer.

A subscriber identity module for a user terminal, comprising

- means for storing identification information for establishing the user terminal with a right to connect to a mobile telecommunication system;

20 - means for storing identification information for establishing the user terminal with a right to provide access to at least one electronic service of at least one determined electronic service producer; and

25 - means for storing identification information for establishing the user terminal with a right to transmit user dedicated digital messages via the mobile communication system, said right being dependent on whether the message is addressed to one of said at least one electronic service producer.

A business model for providing electronic services, comprising the steps of:

providing a user terminal a right to connect to a mobile communication system;

30 providing the user terminal a right to receive messages from the mobile communication system;

providing the user terminal a right to have access to at least one electronic service produced by at least one determined service producer;

35 providing the user terminal a right to transmit user dedicated digital messages via the mobile communication system; and

making the right to transmit user dedicated digital messages via the mobile communications system dependent on whether the message is addressed to one of said at least one determined service producer.

5 Preferred embodiments of the present invention are described in the dependent claims.

A more complete understanding of the present invention, as well as further features and advantages of the present invention, will be obtained by reference to the following detailed description and drawings.

Brief Description of the Drawings

- 10 FIG. 1 is a schematic block diagram illustrating a prior art electronic betting system;
- FIG. 2 is a schematic block diagram illustrating an exemplary system according to the invention for providing electronic services; and
- 15 FIG. 3 illustrates a flow diagram of an exemplary method for providing rights for using electronic services with a user terminal,
- FIG. 4 illustrates a flow diagram of an exemplary method for providing electronic betting according to the invention until the acceptance of a bet order,
- 20 FIG. 5 illustrates a flow diagram for an exemplary method for providing electronic betting according to the invention starting from the acceptance of a bet order,
- FIG. 6 illustrates an example of a short message for transmitting a bet order according to the invention, and
- 25 FIG. 7 illustrates a block diagram of an example of a subscriber identity module according to the invention.

Detailed Description

Figure 1 was described in the prior art section of the specification.

Figure 2 illustrates an exemplary embodiment of an arrangement for providing electronic services in accordance with the invention. The embodiment concerns a betting service arrangement. The betting event is in this exemplary case a car race.

The user of a mobile terminal 214 acquires a SIM with a right to use betting service.
5 The SIM is loaded with a prepaid amount money for placing bets and installed into a mobile terminal 214. The SIM can be acquired from a shop 295, where the prepayment is loaded on the SIM. The prepayment is paid on the bank account of the betting service provider by having a transfer connection between a shop terminal 295 and a bank 296. The information on the prepayment and the SIM identification
10 is also transferred to the betting management system 230 which registers the information and gives the SIM a right to use the services. The betting management system thus comprises the required register of all subscribers that have right to use the services.

The event, eg. car race, is imaged with a TV/video camera 205, and the race is
15 further broadcasted, 206, 209, on an electronic mass media such as television channel 208 as a live program. There may also be audience present in the race. There may be a large display screen 202 on the race where there is displayed information on the situation in the race as well as information on possible betting objects and evens. The display screen is controlled by the betting management
20 system 230, and the display can therefore give real time information on the betting. The betting information may also be transmitted in an electronic group media, which is advantageously the same television channel where the live event is broadcasted. The betting information can be shown as text which is added on the video signal to be broadcasted. If the text is added directly to on the broadcasted
25 images, the text is visible for all the viewers of the event. Another possibility is to send the betting information in a teletext service of the broadcast channel. It is then visible for those viewers who have the teletext properties in their television set and who have activated the correct text page in the television set. It is, of course, possible to have a teletext information visible together with the program of the
30 event. In order to have real time information on the betting, it is preferable to synchronize the transmission of the betting text pages with the changing incidents of the betting information and/or with incidents of the broadcasted live event.

It is also possible to transmit the betting information as digital messages to the mobile terminals of the potential bettors. A group transmission of short messages
35 can be used for this purpose. The messages can be transmitted to those viewers who

have informed that they wish to take part in the betting. The bettors can enter on the active list of potential bettors by e.g. sending a short message to the betting service provider. After the bettor does no longer wish to receive the betting information from the concerned event, the bettor can send another short message indicating that
5 the bettor is to be removed from the active list of bettors.

A person who attends to the betting may thus watch the event in the television 216, and receive the betting information 245 from a tv or from a mobile terminal. If the person wants to make a bet order, the order can be transmitted to the betting management system with a user dedicated communication. The exemplary betting
10 management system may include connection ports for both Internet terminals and for mobile terminals. A user 210 with an Internet terminal 212 may send orders to the electronic betting management system 230 via the Internet 240. The communication is, as in usual Internet connections, using HTTP and TCP/IP protocols. The betting management system 230 includes an MS SQL server 7 (234)
15 and an MS IIS 4 Web server (232). The communication between the Internet terminal and the electronic betting management system can be implemented according to the prior art. The Internet use, however, commonly requires the registration of a bettor by making agreements with the service provider and a bank.

A customer 210 that attends to the betting with the mobile terminal 214, makes a
20 decision on a bet order, connects to a mobile communication system and sends the order information to the betting management system with a short message.

The mobile terminal has a wireless signalling link to one of many base stations 262, further connected to a base station controller of the mobile communication system. A mobile communication system generally also includes mobile switching centers
25 that interconnect the base station controllers into a mobile communication net 260.

The mobile communication system has also registers with e.g. subscriber information. Together with these registers the operator 280 of the mobile system provides a Short Message Services Center (SMSC) for storing and conveying the short messages. However, it is also possible that the short messages pass, 275, the
30 SMSC, because it is not necessary for the SMSC to make any processing like registering, storing or invoicing with the messages. The short messages are further transferred 290 between the mobile communication system and the electronic betting management system 230. The transfer can take place via the Internet 240 or some other communication link. The information may be transferred between the

mobile communication system and the electronic betting management system in the form of short messages, or in some other form.

After the bet order has reached the betting management system, and the bet order has been registered and accepted, a betting management system may send an
5 acknowledgement message to the concerned bettor indicating that the bet has been received and approved (or disapproved). The acknowledgement message can be transmitted with the same data transfer means as the bet order. The acknowledgement message can therefore be advantageously a short message.

It is clear that the electronic betting management system may comprise
10 communication ports for many mobile communications systems that are provided by different operators. These mobile communications systems may also have different communications standards such as GSM, GPRS or UMTS. Most digital mobile communications systems provide a short message (a message with a maximum length) service that is based on short messages that are transferred in the form of
15 signalling without forming a continuous call connection.

The subscriber registers of a mobile communications system include information on accumulated value of calls for billing the subscribers. Except calls, the accumulated values may include payments also for other services or products. A user of a mobile phone can thus buy services or products by calling to a certain telephone number,
20 and the price of the call then includes the price of the bought product. The provider of the electronic betting services may therefore have an agreement with the mobile system operator according to which the payments of the bets are added to the accumulated value of calls/messages of the subscriber. However, the disadvantage with such a billing procedure is that it causes additional procedures for the operator
25 and may add too much to the cost of services. Therefore it is preferable that the electronic service provider has its own registers on the service subscribers. However, even if the payments are not directed through the mobile communications system operator, the betting service provider can use the information of the short message to authenticate the sender of the message and use it in a direct billing
30 procedure.

The functional units in Figure 2 are not explained in more detail, as they can be designed by a person skilled in the art using this description of the basic inventive idea. Also functional details as described with Figure 1 can be applied. One should also note that the management system for electronic services may in the simplest

form be just a receiver device for receiving digital messages and conveying orders for the personnel service provider.

Figure 3 illustrates a flow diagram of an exemplary method 300 for providing a right to use electronic services of a service provider. The mobile terminal for using an electronic service is equipped with a SIM. In this SIM is stored information on the telecommunications system ie. the operator whose communication channels the mobile terminal is allowed to use, 31. The SIM is also stored with identity information so that the operator and the electronic service provider is able to identify the SIM, 32. The identification information of the SIM card as well as the operator information may be prestored to the SIM in such a way that it is not necessary or possible to change the information.

The SIM is then equipped with a right to use electronic services provided by a determined service provider. For this purpose identification information of the service provider is then stored to the SIM, 33. This identification information may eg. be a telephone number, or list of numbers, which are used for creating a connection to use the (all or determined) services of the service provider. The telecommunication operator can then prevent the user terminal from having connections or transmitting short messages to other destinations than the allowed telephone numbers of the electronic service provider. The identification information of the service provider may also be stored in other parts of the mobile terminal than SIM, but this may cause that the mobile terminal can only be used for using services of one service provider.

The SIM is then loaded with information on prepayment of services, 34. The amount of usable service may be stored in different ways. For example, it may be an amount of money that can be spent for the service, it may be a number of service "units" or it may be an amount of time for using services. After the SIM has been loaded with said information, the electronic service provider is informed on the amount of prepayment and the identity of the SIM (or identity of the mobile terminal), 35.

The loaded SIM is installed into a mobile terminal which is equipped with functions that are required for using the electronic services. The SIM may also include a stored program for providing service specific functions in the terminal.

It may further be required that the right to use the communication service of the operator must be separately provided or "opened", 36. This may be done, for

example, by calling to a determined telephone number of the operator, and the operator may then read the information stored on the SIM and identify the SIM as a user of the electronic service provider. And finally the right to use electronic services is registered by the service provider and possibly by the telecommunications operator, 37.

It may also be possible, that it is possible to store prepayment and identification information for different service providers on a single SIM. This would make the use of services from different providers easier. Another possibility is that the user must have a dedicated SIM for the use of services from each service provider.

Figure 4 illustrates a flow diagram of an exemplary method 400 for providing electronic betting service according to the invention. The user has first obtained a subscriber identity module (SIM) with a stored prepayment for using betting services of a betting service provider, as was illustrated in Fig. 3. This SIM is installed into a terminal.

A betting event (such as a football match) may be video imaged with e.g. a television camera, and the program may further be broadcast on an electronic mass media, such as television channel. First in step 410 the betting service provider determines a betting object and possible choices for betting. The betting service provider may also determine an evens for each choice for betting. The evens means a factor by which the bet stake is multiplied for a reward, if the bet is successful. This is convenient for a bettor, because the bettor knows in advance what the evens is. However, informing a fixed evens means that the betting service provider carries a risk on the betting. Another possibility is to determine the evens according to the amounts of bets for different choices. If the evens is thus calculated, the betting service provider can take a certain percentage of the betting turnover as a profit and does not need to carry a monetary risk for determining the evens parameters.

After the betting object and choices have been determined, the betting management system may transmit the information on the betting object to potential bettors by wireless transmission, step 420. This information may include a betting objects, choices, evens and bet prices. The information can be sent in group messages to those mobile terminals that have entered in a list of active bettors, or that are near to the location where the event takes place. The betting information may also be displayed on a display screen for the audience, step 430. This information can be included in the mass media program showing the event. This way the information on the betting can be broadcasted to the viewers of the event.

If a viewer wants to take part in the betting a user of a mobile terminal may, for example, send an initial short message to the betting management system informing that the user wants to take part in the betting (this step is not shown in the flow diagram). After receiving this initial message, the betting management system enters
5 the mobile terminal identity information in said list. It is also possible that no registration of a user is required.

When a potential bettor sees information on betting objects, the bettor evaluates whether a bet order should be made, step 440. If the viewer does not find the product information attractive, step 450, the viewer may remain waiting e.g. for
10 changes in the event, in the betting object, in the betting choices or in the evens for the choices, step 452. When the betting situation changes, steps 456, 410, the same steps as described above are repeated.

When the bettor then decides to make a bet order the bettor writes a short message according to a determined form that includes information on the bet, step 460. If
15 there is just one choice for betting, or if different choices have different telephone numbers for sending a bet order, it may be unnecessary to identify the choice in the short message for the order. These telephone numbers are preferably prestored on the user terminal or SIM. The short message is then transmitted from the bettor's mobile terminal to the betting management system. The information of the short
20 message is then read and stored in the register of the betting management system. It is also possible to use other ways to send a digital message including the order information, such as the Internet.

After the bettor has transmitted an order to the betting management system, it may happen that the bet is not accepted, step 490. This may happen for example, because
25 the bet order was received too late or because the predetermined evens has changed and/or does not match with the evens required by the bettor. In such a case an acknowledgement message is transmitted to the bettor informing that the bet was not accepted, step 495. Then the bettor has to make a new evaluation and decision on whether to make a next bet order or not, step 440.

30 If the bet order matches with the bet object information and parameters of the betting management system, a decision can be made that the bettor's order is accepted. The decision can be made by the betting management system on other predetermined conditions. If all the betting parameters are given by the system, the betting management system may wait for bet orders until a determined time instant,
35 and accept the orders that have been received until the determined time instant. If

the bettor can give a desired choice and evens, the system may compare the betting parameters of the bet order and the system, and the decision can be made based on this comparison.

Figure 5 illustrates a flow diagram on steps after the acceptance of the order in the method of Fig. 4. After the betting management system has accepted the order, the corresponding bettor is informed on the acceptance with an acknowledgement message. One possibility is to give the information on the acceptances of bets via the mass media. However, there may be a need to transmit an acceptance message to the bettor the receipt of which can be confirmed. The message can be transferred by e.g. a short message or via the Internet/email. In the method of Figure 5 the betting management system forms a short message with the information on acceptance of the bet order, step 510. The betting management system then transmits the short message to the mobile terminal of the bettor thus indicating that the order has been accepted, step 520.

The payment for the betting can be made by reducing the amount of prepayment on the SIM. After the bet has been confirmed, the payment for the betting may be automatically reduced from the payment register of the prepaid SIM. The service provider has preferably its own register for prepayments, and makes the same reduction from the subscribers prepayment register. If the service provider has an updated register for the payments, it is possible to avoid any misuse of storing wrong payment information on a SIM.

It is also possible that the betting service provider identifies the bettor's payment and banking information according to the SIM identity (eg. its telephone number that is included in a short message). The short message usually includes the telephone number of the subscribers mobile terminal. The betting service provider may have its own list of subscriber information or the betting service provider may alternatively get the name and address of the subscriber from the operator of the mobile communications system.

Since the short message from the bettor includes a certified telephone number of the subscriber, it is possible to carry out the billing procedure, step 540. If the bet of the bettor has been successful, step 550, the betting management system pays a reward for the bettor, step 560. The reward can be paid according to the subscriber information of the bettor. The payment of reward may be done at a location where the prepayments of services are made. It is also possible that the bettor informs a bank account to the betting service provider for the payment of rewards. This can be

informed e.g. by sending a short message to the betting management system, the short message including the bank account number. The betting management system can then identify the sender of the short message and interpret the information of the short message to mean the bank account for rewards. There may be a separate
5 telephone number for informing the bank account numbers for the betting service provider. An advantage in using these methods is that there is no need to make any special agreements for paying the rewards.

Figure 6 illustrates an example on a short message that can be used for transmitting an order to the betting management system according to the invention. The short
10 message comprises a first identifier field 610 for identifying the object for the bet, such as "F1 winner". The short message further comprises a second identifier field 630 for identifying the choice for the bet, such as "Mika Hakkinen". This identifier field may not be needed, if there is just one choice available for betting at any time and/or choice that the order is made for. This identifier fields 610 and/or 630 may
15 also not be needed, if the different objects/choices are separated by different telephone numbers for transmitting the bet order. The object and choice may also have a common identifier.

A third identifier field 650 includes the monetary amount that is made for the bet. This identifier field may not be needed, if the bets are made with a fixed price. A
20 third identifier field 670 includes information for authenticating the bettor. This identifier field may not be needed, if the bettor making the order is identified in some other way, such as the subscriber identifier that is transmitted together with the short message data. It is also possible to use more than one method for authenticating the user in order to achieve a high degree of security.

The identifier fields are separated with separating characters 620, 640 and 660. In this example the separating character is ":". The separating character can be any predetermined character or it may consist of more than one successive characters. The short message in this example has a maximum length of 160 characters. Usually
30 all this data space is not needed for the order data, so there is unused data space in the short message, 660. There may also be other ways to recognize the identifier fields of the short message than using separating characters. One alternative possibility is to use predetermined locations for the different identifier fields in the short message. However, this solution is more difficult for the user because one would need to check that all the input data is in its correct place in the short
35 message.

One should further note that a very simple way of realizing the inventive idea is to use different telephone numbers for different choices of bets. The advantage is that the user does not need to write betting object/choice information to a short message. The monetary value of a bet may also be fixed. The advantage of this is also that the user does not need to write bet value information to a short message. Another advantage is that the bet is then very easy to pay by just determining a corresponding price for sending a short message to the service provider. So it is possible to realise a betting system where it is not necessary to write any information to the short message of the bet order.

- As mentioned above, the short message usually includes, except the user input data, also information that identifies the subscriber connection where the short message is transmitted from, and information on the address (telephone number) where the short message is transmitted to.

Figure 7 illustrates an example of a SIM according to the invention. In the following, the purpose and operation of a SIM is first described.

The Subscriber Identity Module (SIM) card is an intelligent card used in digital mobile terminals that stores, among other things, the subscriber's identification information such as e.g. the mobile phone number. The system routes calls for the subscriber to that mobile terminal which has the subscriber's SIM card installed in it. The subscriber may change mobile terminals simply by removing the SIM card from one apparatus and inserting it in another one. In addition to said identification information the SIM card may store SMS (Short Message Service) messages, the subscriber's private phone book as well as other information chosen by the subscriber. In addition, the GSM (Global System for Mobile Communications), for example, may store various control data in the SIM card. The SIM card and the architecture of the GSM are described in more detail e.g. in a book by Michel Mouly & Marie-Bernadette Pautet: The GSM System for Mobile Communications, ISBN 2-9507190-0-7, Palaiseau 1992. The SIM card is described in detail in the GSM Recommendation ETSI GSM 11.11 and in the standard ISO/IEC 7816.

When a person subscribes to a service provided by a mobile network operator, he or she is given a SIM card that identifies the subscription. Usually the operator charges the subscriber for the calls he or she has made using e.g. invoices sent to the subscriber regularly. Often, however, a person needs a mobile terminal for only a short period of time, e.g. in connection with a trip abroad, so it would be inconvenient to have a permanent subscription in that case. In many cases it would be too risky for

the operator to allow credit to the subscriber, whereby payments in arrear cannot be allowed. For this reason there are mobile subscriptions in which a certain call charge is paid in advance, and if the prepaid sum is exhausted the mobile subscription will be closed. Such SIMs are here called prepaid SIMs.

- 5 In the current GSM system a prepaid subscription is realized such that information indicating the sum of prepaid call charges is stored in the SIM card. Use of a prepaid SIM card requires that messages be transferred between the SIM card and system so that the system can make sure the prepaid sum is not exceeded.

10 In one preferable embodiment of the present invention electronic services of a service provider are prepaid using a technology that is similar to the prepaid SIMs. However, since the electronic service provider is different from the telecommunications network operator, the communication for loading and reducing the prepaid amount of the SIM is made between the SIM and electronic service provider. The use of the telecommunications network can thus be paid separately by
15 the electronic service provider.

Fig. 7 shows a block diagram of an exemplary SIM card 700 according to the invention. A control unit 730 CPU controls the functions of the SIM card according to program code stored in the program memory 742 ROM. Various subscriber-specific information can be stored in the data memory 744 EEPROM which remains
20 intact even when the operating voltage of the SIM card 700 is switched off. Such information may be e.g. the identification data according to the invention. The work memory 746 RAM can be used for temporary storage of information. A bus adapter 720 DATA-I/O adapts the SIM card's mobile terminal interface (control and data I/O) to the SIM card's internal bus 760. The SIM card additionally comprises an
25 chippering block 750 for chippering and decrypting transmitted and stored information. The identification data and the prepayment data register(s) as well as possible programs relating to the present invention can be stored in the aforementioned memories, whereby the central processing unit 730 can be made to carry out functions according to the invention. In addition, the purpose of the SIM card
30 blocks is in accordance with the prior art to manage information needed in the identification of the subscription as well as to serve as a means for receiving and storing SMS messages, storing dial codes and other user-specific information.

As described above, the present invention gives remarkable advantages over prior art systems for implementing electronic services.

When the SIM is tied to the use of services from a determined service provider, it is possible to make the payments between the user and the service provider, and there is no need for the telecommunications operator to convey payments or take a credit risk. This way the costs and prices for providing an electronic service can be kept
5 minimal.

The operator and the service provider may also such make an agreement on fixed payments for using the telecommunications network, which makes the need to count the amount of transferred messages unnecessary. Another possibility is that the electronic service provider has a reliable way of counting the incoming messages
10 and pays for the operator according to the calculated number of messages. This would make it possible that the short messages would not be processed in a short message center as normal, but instead this processing could be partly or totally bypassed. The short messages would then not load the capacity of the short message center, and also a large number of short messages could be transferred to the service
15 provider without additional delays.

If short messages are used in making bet orders, the user can make a bet quickly without any need to make a telephone connection and authentication procedures. The user does not need to make special agreements with banks or the betting service provider in order to start using the betting service. The user can attend to the betting
20 wherever the user's mobile terminal is serviced. The user does not need to have a phone with Internet connection capabilities, and neither does the mobile communications system need to have a capability to provide Internet services.

When group/mass media or short messages are used in informing the user about the betting objects, choices and evens, the user gets the information instantly without
25 any need to keep continuous telephone connection to the betting management system.

It is also possible to produce mobile terminals specifically for using specified services. This kind of a terminal may comprise a prepayment for using the services. Such a terminal may not require a capability for creating speech connections, and
30 therefore such a terminal can be manufactured with low cost.

It is to be understood that the embodiments and variations shown and described herein are merely illustrative of the principles of this invention and that various modifications may be implemented by those skilled in the art without departing from the scope and spirit of the invention. Especially, it is to be understood that the

present invention is not in any way restricted to the mentioned communications systems. The invention is not either restricted to betting but it can be used in any kinds of electronic services, such as sales, auctions, lottery, amusement games etc.

Claims

1. A method for providing electronic services, comprising the steps of:
providing a user terminal a right to connect to a mobile communication system;
5 providing the user terminal a right to receive messages from the mobile communication system;
providing the user terminal a right to have access to at least one electronic service produced by at least one determined service producer;
providing the user terminal a right to transmit user dedicated digital messages
10 via the mobile communication system; and
making the right to transmit user dedicated digital messages via the mobile communications system dependent on whether the message is addressed to one of said at least one determined service producer.
2. A method according to claim 1, comprising a step of restricting said right to
15 transmit user dedicated digital messages via the mobile communication system by restricting the transfer of messages other than those that are addressed to equipment of one of said at least one determined service producer.
3. A method according to claim 1, comprising a step of restricting said right to
20 transmit user dedicated digital messages via the mobile communication system by preventing the transfer of messages other than those that are addressed to equipment of one of said at least one determined service producer.
4. A method according to claim 1, wherein the digital message is a short message in accordance with a short message service (SMS) of a mobile telecommunications system.
- 25 5. A method according to claim 1, wherein substantially all the user information transferred to and from the user terminal is transferred as short messages.
6. A method according to claim 1, wherein said electronic service is betting.
7. A method according to claim 6, wherein the betting comprises a step of
30 transferring the information on the bet order from the potential bettor to a betting system, further comprising the steps of:
forming a short message including information on a new order of the potential bettor;
transferring said short message from the bettor to the betting system; and

reading said information from said short message for determining the betting order of said potential bettor.

8. A method according to claim 7, wherein said information on a new bet order of the potential bettor includes at least one of the following information:
- 5 - betting object,
 - bet choice,
 - a betting parameter,
 - monetary amount of the bet, and
 - bettor identifier.
- 10 9. A method according to claim 7, wherein potential bettors are provided with information on the betting object with digital messages, such as short messages.
10. A method according to claim 7, wherein potential bettors are provided with information on the betting object with group/mass media, such as television communications.
- 15 11. A method according to one of claims 9 - 10, wherein the information on the betting object comprises at least one of the following information:
- the betting object,
 - betting choices,
 - possible monetary amounts of the bets, and
20 - telephone number(s) for sending the bet orders.
12. A method according to claim 5, wherein said betting object concerns a race, a match, a casino game or a lottery.
13. A method according to claim 7, wherein the short message of a bet order comprises identifier fields for different information, and the identifiers of the short
25 message are recognised based on at least one separating character between two identifier fields.
14. A method according to claim 1, wherein an amount of right to use said service is loaded to the user terminal by a payment for the producer of the electronic service, and the amount of remaining right of use is decreased when the service is
30 used.
15. A method according to claim 1, wherein the step of providing a user terminal a right to have access to at least one electronic service produced by a determined

service producer comprises a step of storing an authentication key in a SIM module of the user terminal.

16. A method according to claim 4, wherein the user of an electronic service is identified on basis of an identifier of a subscriber connection in the mobile system,
5 and said identifier is received from the mobile communications system within the short message.

17. A method according to claim 1, wherein the authentication for using the service and/or the payment information is communicated between the user terminal and the electronic service provider substantially unprocessed.

10 18. A method according to claim 7, further comprising a step of transferring an initial short message from a mobile terminal to the betting management system and storing the mobile terminal identity information on a list of subscribers that take part in the betting.

15 19. A method according to claim 7, further comprising a step of transferring a termination short message from a mobile terminal to the betting management system and removing the mobile terminal identity information from the list of subscribers that take part in the betting.

20. A method according to claim 7, wherein the acceptance or non-acceptance of a bet order is informed to the corresponding bettor with a short message.

20 21. A system for providing electronic services, comprising:
means for providing a user terminal a right to connect to a mobile communication system;
means for providing the user terminal a right to receive messages from the mobile communication system;
25 means for providing the user terminal a right to have access to at least one electronic service produced by at least one determined service producer;
means for providing the user terminal a right to transmit user dedicated digital messages via the mobile communication system; and
means for making the right to transmit user dedicated digital messages via the
30 mobile communications system dependent on whether the message is addressed to one of said at least one determined service producer.

22. A system according to claim 21, comprising a step of restricting said right to transmit user dedicated digital messages via the mobile communication system by

restricting the transfer of messages other than those that are addressed to equipment of one of said at least one determined service producer.

5 23. A system according to claim 21, comprising a step of restricting said right to transmit user dedicated digital messages via the mobile communication system by preventing the transfer of messages other than those that are addressed to equipment of one of said at least one determined service producer.

10 24. A system according to claim 21, wherein the digital message is a short message in accordance with a short message service (SMS) of a mobile telecommunications system and the system comprises one or more communications ports to receive short messages.

25. A system according to claim 1, wherein substantially all the user information transferred to and from the user terminal is transferred as digital messages, such as short messages.

26. A system according to claim 1, wherein said electronic service is betting.

15 27. A system according to claim 26, comprising means for recognising the bet order identifiers of the short message based on at least one separating character between two identifier fields.

28. A system according to claim 21, comprising means for paying the electronic service with a prepayment loaded on a SIM.

20 29. A system according to claim 21, comprising means for communicating the authentication for using the service and/or the payment information is between the user terminal and the electronic service provider substantially unprocessed.

25 30. A system according to claim 21, comprising means for identifying the bettor on basis of an identifier of a subscriber connection in the mobile system received from the mobile communications system within the short message.

31. A system according to claim 24, further comprising means for transferring an initial short message from a mobile terminal to the betting management system and means for storing the mobile terminal identity information on a list of subscribers that take part in the betting.

30 32. A system according to claim 26, further comprising means for transferring a termination short message from a mobile terminal to the betting management system

and means for removing the mobile terminal identity information from the list of subscribers that take part in the betting.

33. A system according to claim 26, comprising means informing on the acceptance of a bet order to the corresponding bettor with a short message.
- 5 34. A user terminal, comprising
- means for establishing the user terminal with a right to connect to a mobile telecommunication system;
 - means for establishing the user terminal with a right to provide access to at least one electronic service of at least one determined electronic service producer; and
 - 10 - means for establishing the user terminal with a right to transmit user dedicated digital messages via the mobile communication system, said right being dependent on whether the message is addressed to one of said at least one electronic service producer.
- 15 35. A user terminal according to claim 34, comprising a user interface with dedicated means for said at least one electronic service.
36. A user terminal according to claim 34, comprising dedicated software for using said at least one electronic service.
- 20 37. A user terminal according to claim 34, comprising means for transferring all transferable user data with digital messages without a switched circuit speech connection.
- 25 38. A subscriber identity module for a user terminal, comprising
- means for storing identification information for establishing the user terminal with a right to connect to a mobile telecommunication system;
 - means for storing identification information for establishing the user terminal with a right to provide access to at least one electronic service of at least one determined electronic service producer; and
 - 30 - means for storing identification information for establishing the user terminal with a right to transmit user dedicated digital messages via the mobile communication system, said right being dependent on whether the message is addressed to one of said at least one electronic service producer.
39. A subscriber identity module according to claim 38, comprising means for storing information on remaining, prepaid right to use the at least one service of the determined service producer(s).

40. A business model for providing electronic services, comprising the steps of:
providing a user terminal a right to connect to a mobile communication system;

5 providing the user terminal a right to receive messages from the mobile communication system;

providing the user terminal a right to have access to at least one electronic service produced by at least one determined service producer;

providing the user terminal a right to transmit user dedicated digital messages via the mobile communication system; and

10 making the right to transmit user dedicated digital messages via the mobile communications system dependent on whether the message is addressed to one of said at least one determined service producer.

41. A business model according to claim 40, wherein the service is prepaid and the information on the prepayment is loaded in a SIM of a user terminal.

15 42. A business model according to claim 40, wherein the authentication for using the service and/or the payment information is communicated between the user terminal and the electronic service provider substantially unprocessed.

20 43. A business model according to claim 40, wherein conveying the messages to the electronic service provider is paid for the telecommunication operator by the electronic service provider, preferably according to the amount of received messages.

44. A business model according to claim 40, wherein the user dedicated communications is short message service of a mobile telecommunications system.

25 45. A business model according to claim 40, wherein the user terminal is only usable for transferring digital messages.

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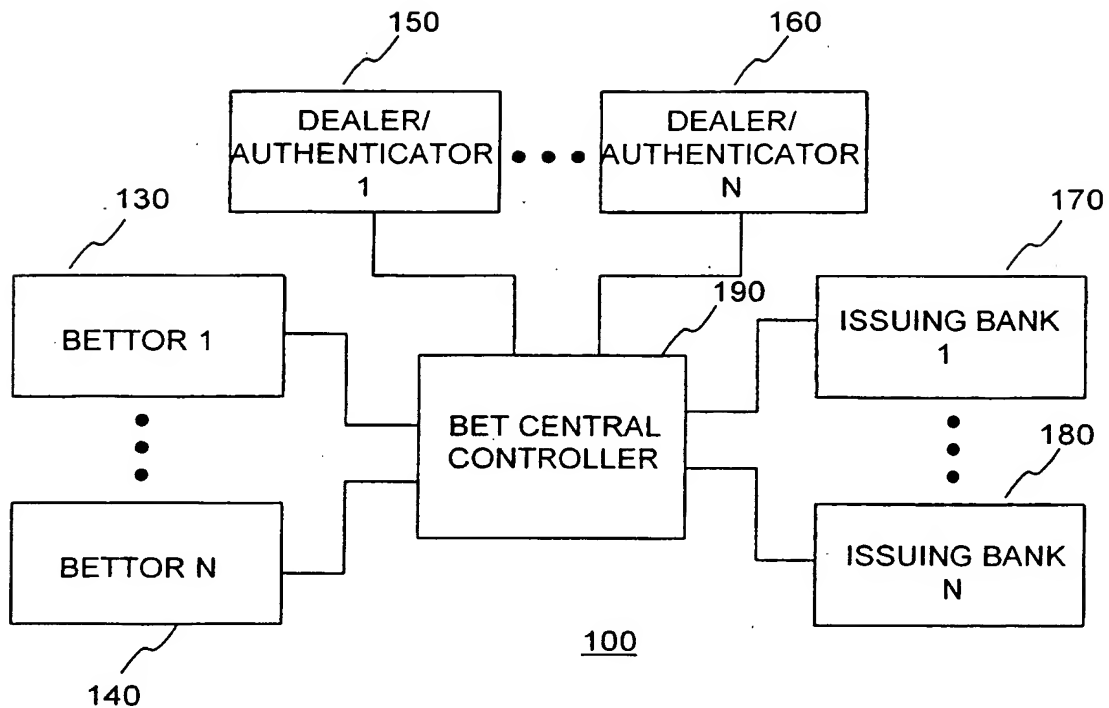


FIG. 1
PRIOR ART

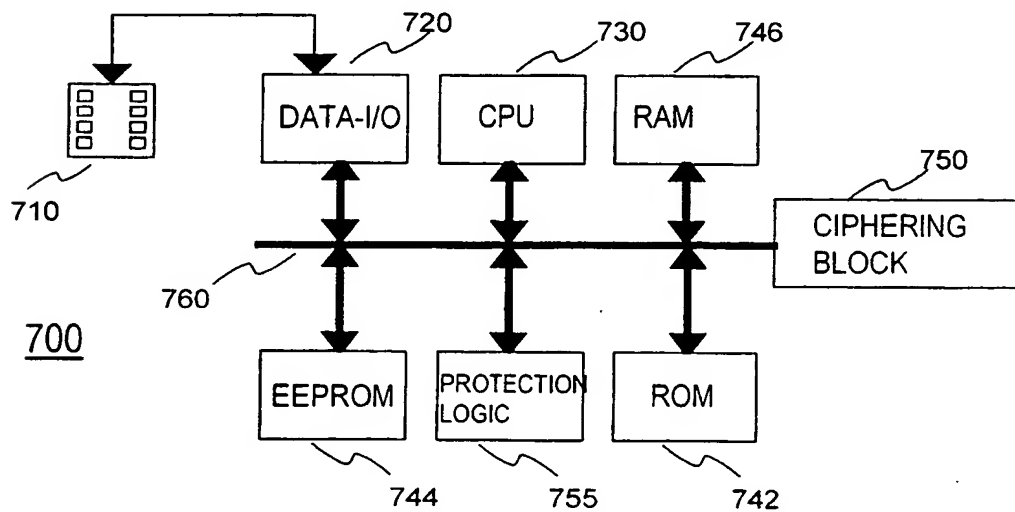
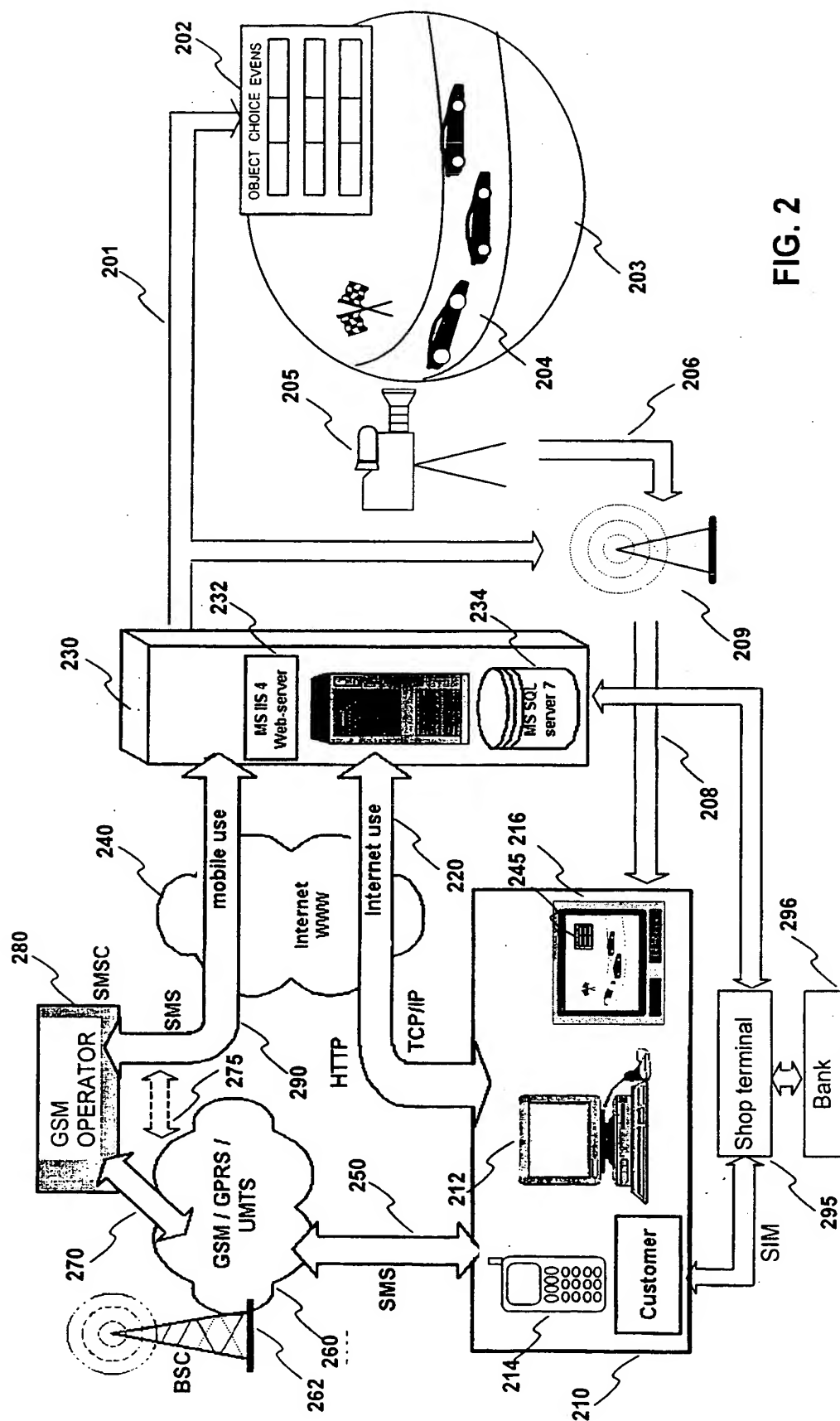


FIG. 7

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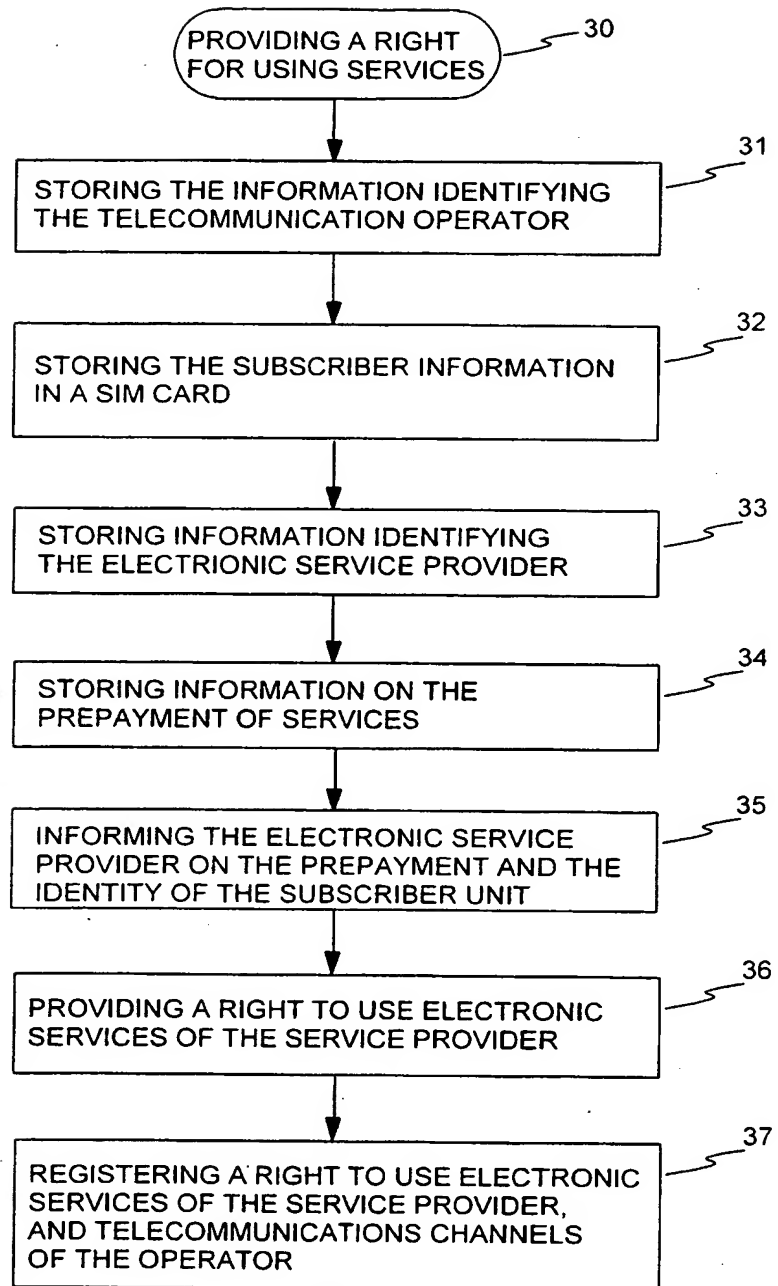
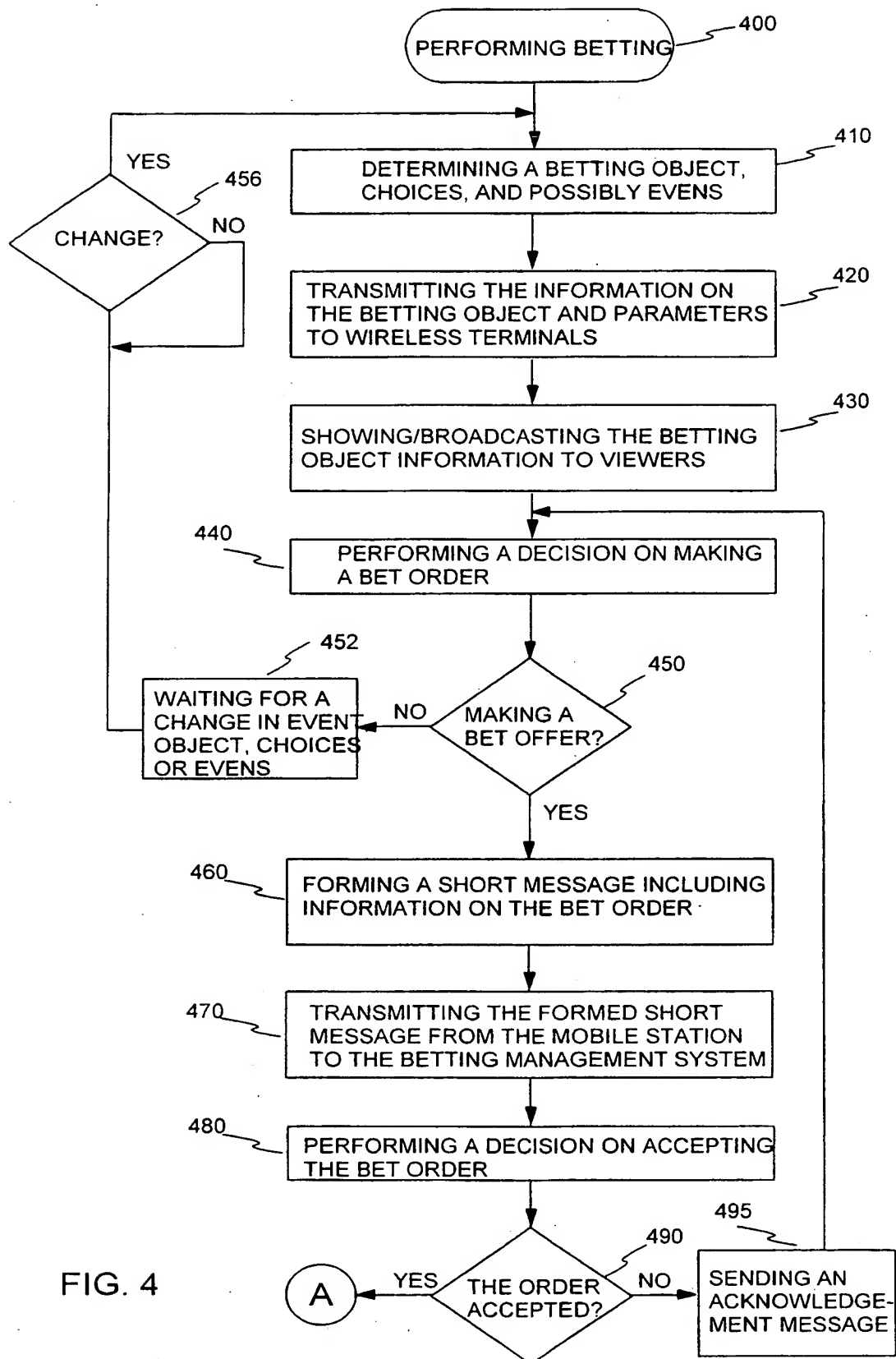
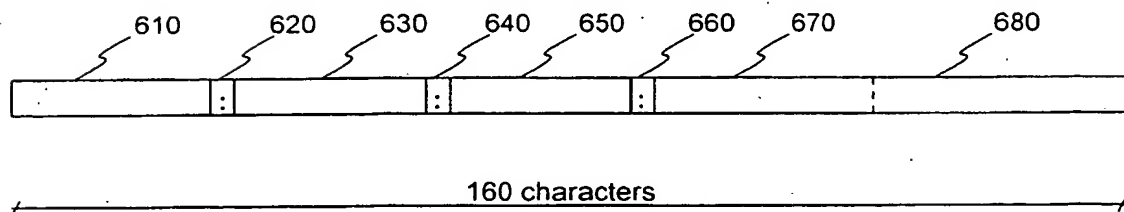
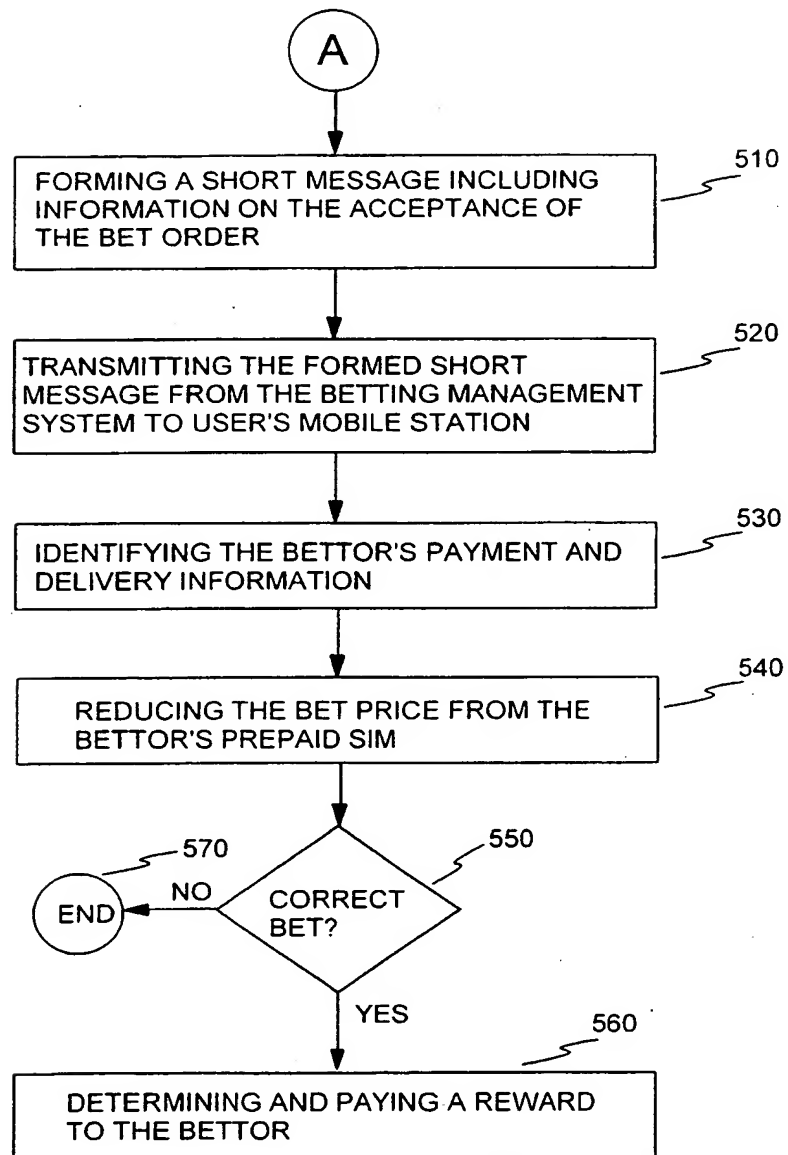


FIG. 3

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 00/00525

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G06F 19/00 // G06F 155:00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,N0 classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9942964 A1 (SWISSCOM AG), 26 August 1999 (26.08.99), page 2, line 5 - line 22; page 2, line 28 - page 3, line 11; page 4, line 10 - line 26, page 7, line 9-18; see claims 1, 3-10 and abstract --	1-45
X	DE 19502613 A1 (PETER EIBA), 1 August 1996 (01.08.96), see the whole document --	1-45



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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Date of the actual completion of the international search

28 Sept 2000

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INTERNATIONAL SEARCH REPORT

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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Y	page 3, line 18 - page 5, line 3 --	4-5,7-11,13, 15-16,18-20, 24-25,27-28, 30,32-33,41, 43-45
Y	WO 9411849 A1 (HARRI VATANEN), 26 May 1994 (26.05.94), page 1, line 1 - page 5, line 9, figure 1, claims 1-10, abstract -- -----	4-5,7-11,13, 15-16,18-20, 24-25,27-28, 30,32-33,41, 43-45

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
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